

WHAT IS CLAIMED IS:

1. A classification and/or counting system comprising video means sited to view an area of interest, and means for generating electrical signals representing video images of said area, characterized by the provision of processing means for processing said signals to discern identifiable recognition criteria therefrom, means for utilizing said criteria to directly classify, into at least one of a predetermined number of categories, objects entering and/or leaving the area of interest, and means utilizing the classification of said objects to provide an output indication relating respective said objects to respective said categories.
2. A system according to claim 1 wherein the output indication is combined with other data relative to the environment of the area of interest in order to permit the assimilation of said indications into a wider pattern of data for comparison and evaluation.
3. A system according to claim 1 wherein the area of interest comprises a floor area, and the video images are derived, at least in part, from an overhead television camera mounted directly above the floor area.
4. A system according to claim 1 wherein said area of interest is located within the entrance/exit area of a supermarket or a department store and wherein said objects comprise customers and trolleys.
5. A system according to claim 1 wherein visual information is derived from first and second regions of said area of interest for the purpose of customer classification and counting; the information derived from said first region being used for the detection of people at the entrance and their direction of motion; and that derived from the second region being used to classify and count them.
6. A system according to claim 5 wherein the information derived from said first region is subjected to processing including bi-directional block matching to detect the

direction of motion of objects detected therein.

7. A system according to claim 4 wherein the categories into which objects are classified includes at least one of: number of trolleys; number of groups; group sizes (in terms of numbers of people); number of children; number of adults; number of males with trolley; number of males without trolley; number of females with trolley; number of females without trolley; and number of adults of indeterminate sex.

8. A system according to claim 4 wherein trolley detection is effected by using a line edge detector to detect lines, calculating the number of lines detected and comparing that number with a predetermined threshold value.

9. A system according to claim 4 wherein classification as between adult and child is carried out on the basis of images captured by an overhead camera, processing the plan images so produced to derive object boundaries, counting the number of pixels within each boundary and comparing the pixel numbers so counted with a predetermined threshold, dimensioned to distinguish in general between adults and children.

10. A system according to claim 4 wherein classification as between adult and child is carried out utilizing a camera that views obliquely, and which is used to capture images for adult and child classification based upon the measurement of height.

11. A system according to claim 4 wherein group detection is carried out to identify whether objects (e.g. customers) are individuals or part of a group; based upon measuring the proximity of people to one another.

12. A system according to claim 4, wherein differentiation between male and female customers is carried out on the basis of detection and classification of people's hair using images derived from an obliquely mounted camera.

13. A system according to claim 12 wherein the procedure for detection and classification of hair comprises head top detection, hair sampling and hair area detection; and comparison of the areas detected with predetermined thresholds.
14. A system according to claim 12 wherein height measurement is used to assist in the differentiation as between males and females.
15. A system according to claim 4 wherein differentiation between male and female customers is carried out on the basis of detection and classification of energy reflected from customers' anatomy.
16. A system according to claim 1 wherein the area of interest is associated with a transportation terminal, such as a railway station or an airport terminal.